TRANSACTIONS

OF THE

CHICAGO SURGICAL SOCIETY.

Stated Meeting, February 2, 1906.

The President, Dr. D. A. K. Steele, in the Chair.

ŒSOPHAGEAL POLYP REMOVED BY OPERATION.

Dr. W. R. Cubbins (by invitation) reported a case of œsophageal polyp removed by operation, and exhibited the specimen. The patient was 45 years of age, married; occupation, roofer. He had been previously healthy; he gave no history of any disease. He was the father of ten children, seven of whom were living. During the administration of an anæsthetic for the reduction of a dislocated shoulder joint the patient vomited, and during this act the tumor was extruded from the mouth, and was grasped and measured, so that it protruded four inches outside the mouth. He wanted to remove the tumor, but the patient's wife objected and insisted on his returning it, and it was swallowed back. After this it was necessary to anæsthetize the patient again for another operation, and several attempts were made to remove the polyp by introducing a forceps down through the œsophagus, but were unsuccessful. Shortly after this the patient began to develop symptoms of obstruction. These were not severe at first, but at the end of three months obstruction was so marked that he was unable to take anything except liquids. Solid food was ejected unchanged. The tumor seemed located at the sternal notch. For over half an hour it was impossible to get fluids up or down. Patient could neither vomit nor swallow. At the end of three-quarters of an hour the tumor seemed to pass down, so that the patient was again able to swallow water or milk and other liquid food. He had become very much emaciated when he appeared the second time. He was now prepared for an operation on the neck, and attempts were made to nauseate him, so that he would throw up the tumor. His stomach was filled with water; he was given some apomorphia, but no fluids would come up. He was, therefore, anæsthetized, but attempts made to draw the tumor from the throat failed. Dr. Wm. E. Schroeder and the speaker then did a lateral œsophagotomy, after having located the œsophagus with stomach-tube, and they found the tumor situated on the anterior portion of the œsophagus, with the pedicle a little to the left of the median line just above the larynx and cricoid cartilages and extending down into the œsophagus for about seven inches. It was ligated and removed, and the wound closed, with packing. The tumor measured sixteen centimetres in length, just above the lower end it was rather cone-shaped, and was five centimetres, in diameter and at the pedicle one centimetre. It weighed 210 grams. The lower end was eroded when they removed it. When it was first extruded, six months before, there was no erosion at the lower end.

In looking up the literature the reporter had found the best article on the subject had been written by Minski, of Dorpat, who had gone back to 1687 and had brought the literature down to 1887. The first case was seen by von Heys, who tried to get rid of the tumor by brushing it, and in so doing excited inflammation which killed the patient. This article was exceedingly interesting from the fact that it was printed in five languages, Latin, French, German, English, and Swedish.

They found three cases reported in which the tumor was removed by the mouth. The tumor had been thrown up and held until it was clipped off, the pedicle ligated, and returned. The other tumors were diagnosed at autopsy. The patients had symptoms of obstruction during life. The tumors were located at different places in the œsophagus, from the upper portion of the larynx down to the middle portion. Some extended down as far as the pylorus (?).

These tumors had been described as steatomata, but the more recent ones as fibromata, with large amounts of fat. The microscopic slides showed large amounts of fat. To look at the tumor one would not suspect fat. In some portions there were small accumulations of lymphoid tissue.

Monroe in 1763 described the case of a man who vomited a four-prong fleshy tumor, with one pedicle. He was allowed to swallow it again, and after seven or eight months died of starvation. Monroe, Jr., described another case of the same type in 1797.

In the microscopic sections described by Professor Minski they found that the description fits the tumor they had removed exactly, with the exception that the œsophageal mucosa was very much more marked, and the papillæ were more marked in their sections than in the illustrations which he gave. But the fibrous tissue, arranged in layers, was very prominent, with a fatty layer in between, and with only one portion that looked like a clear fibroma in the specimen which upon section showed lots of fat.

In the bibliography they found the only trouble with the voice was when the tumor involved the larynx by traction on the mucous membranes pulling back upon the arytenoid cartilages.

DR. B. W. SIPPY read a paper, by invitation, entitled "Diagnosis of Œsophageal Lesions," (for which see page 858).

DR. WILLIAM E. SCHROEDER said as to the operation for the removal of the œsophageal polyp they succeeded in getting hold of the tumor with a pair of forceps and in putting a clamp on it, but were unable to deliver it. He thought this was fortunate in a way, because there were large vessels in the pedicle of the tumor. An external œsophagotomy was finally performed and the tumor fished out with the finger; the pedicle was clamped above and below, sutures applied to the pedicle first, and the œsophagus closed with Czerny-Lembert sutures, and the wound packed.

If these tumors lay deep down, as they did at times, in the thorax, he thought it would be difficult to remove them. Even with the œsophagoscope it was hard to see how one could grasp such a pedicle at such a long distance through the œsophagoscope.

As to trauma of the œsophagus, about eight years ago a recent graduate decided that it was necessary to wash out his brother's stomach. Accordingly, he procured a soft stomach-tube, and proceeded to introduce it. The patient, a young man twenty years of age, expressed great pain immediately the tube came to the cardiac end of œsophagus, and the fluid was passed in. The case came to post-mortem in short order. It was found that there were no pathological changes in the lower part of the œsophagus, but that the tube had perforated the œsophageal wall and the left thoracic cavity was filled with water. Microscopical examination showed the œsophagus was perfectly normal; the stomach was normal, and the patient was normal in every sense of the word. He had eaten something which did not agree with him, and he thought it was the proper thing to have his stomach washed out. Here was a serious accident following a simple procedure.

Dr. Louis Greensfelder said the swallowing of foreign bodies, such as fish-bones, small particles of chicken-bones, etc., not infrequently caused abrasions of the mucous membrane of the œsophagus and produced œsophageal abscesses.

Another point was the occurrence of typhoidal ulcers at the lower portion of the œsophagus, which Dr. Sippy omitted to mention.

Dr. Daniel N. Eisendrath asked whether the œsophagoscope was absolutely necessary in the diagnosis of œsophageal lesions? Also, whether it was not sufficient to use the various forms of bougies and bismuth, with the use of the X-ray, etc., in making an ordinary diagnosis of œsophageal lesions? He asked whether any microscopical examinations had been made in these cases of cardiospasm. He asked whether the administration of large quantities of bismuth in these cases and of getting an X-ray shadow of this spindle-shaped dilatation would not be a great aid?

He presented to the Society about two years ago a young man who had specific stenosis of the œsophagus. He was very much emaciated, and œsophageal bougies were arrested at about the level of the bifurcation of the bronchi. X-ray with the aid of bismuth was used, and the X-ray showed that the bismuth was arrested at about the level that the bougie was. Autopsy showed that there was no diverticulum, as was thought possible at the time, but there was œsophageal stenosis of specific origin, as was originally thought from a distinct history of syphilis.

Dr. Sippy replied that the chief value of the œsophagoscope was for the removal of foreign bodies. There it became indispensable. A foreign body firmly lodged in the œsophagus constituted a very serious condition; unless removed it sooner or later caused the death of the patient. The early use of the œsophagoscope for the removal of a foreign body must be strongly urged. During the first day or two, after a foreign body had lodged, there was very little inflammation present, but after three or four days or a week, inflammation became intense; abscess formation occurred; perforation of the wall of the œsophagus was likely to take place, and above all, after a short time inflammation surrounding the foreign body made it difficult to extract. So whenever a foreign body was lodged in the œsophagus in an inaccessible position, which could not be pushed down or brought up, the œsophagoscope should be used at once, and in a great many cases, not in all, the foreign body could be extracted.

As to the use of the œsophagoscope in the diagnosis of lesions, relatively little aid was obtained by using this instrument in the diagnosis of diverticulum of the œsophagus. At times it was possible to see the communicating point between the œsophagus and diverticulum, but one usually saw only a pouch.

As to its value in differentiating cicatricial stenosis from carcinoma of the œsophagus, in most cases a diagnosis could be made without the use of the œsophagoscope, but there were cases in which a good deal of difficulty might be encountered, and in all instances the œsophagoscope was likely to render diagnosis more positive. He had said in his preliminary remarks that there was great danger in assuming that carcinoma was present when obstruction existed. If one looked at the obstruction and found a nodular, ulcerated, or sloughing mass, the diagnosis of carcinoma would be greatly strengthened thereby. The instrument was certainly of value in cases that were not absolutely plain.

In differentiating cicatricial stenosis from cardiac-spasm, the œsophagoscope he considered of value because usually the funnel-shaped stenosis produced by the cicatricial narrowing was quite different from simple muscular contraction at the lower end of the œsophagus. In most cases a differential diagnosis could be made fairly certain without the use of the œsophagoscope, but there was no question that one was much more certain after using the œsophagoscope than without it.

In answer to Dr. Eisendrath's question, he said that microscopical examination had been made when cardiospasm was present. Various theories had been advanced as to why idiopathic dilatation of the œsophagus occurred. Mikulicz and Meltzer brought forth the idea of primary spasm of the cardia. Rosenheim believed that atony of the wall of the œsophagus or primary weakness of the wall of the œsophagus was responsible for the development of the dilatation in certain cases. The proper tonus being absent, rapid eating caused undue filling of the œsophagus, resulted in sacculation and the lodgement of food; the accumulation of food irritated the wall of the œsophagus, which was likely to result in secondary spasm of the cardia.

Kraus advanced the theory that degeneration of the pneumogastric nerve was a cause of idiopathic dilatation of the œsophagus. Normally, the closure at the cardiac orifice was under the influence of two forces, one the contraction of the circular fibres of the œsophageal muscle; the other an inhibitory force which caused relaxation of the cardia under the influence of swallowing and vomiting. Fibres from the pneumogastric supplied the impulse that relaxed the cardia. Other fibres of the pneumograstric supplied the peristalsis of the œsophagus. Disease of both sets of fibres resulted in a removal of the relaxing force governing the cardia, and at the same time caused weakening of the peristalsis of the œsophagus. A paretic œsophagus and unrestrained contraction of the cardia would readily result in œsophageal dilatation. Kraus found degeneration of the pneumogastric nerve in one case. Klebs found fatty degeneration of the muscle. Round-cell infiltration of the muscle-wall had been found in cases associated with œsophagitis.

Forcible dilatation was the best method of treating cardiospasm. The passage of bougies had been followed in a number of cases by good results, but if dilatation of the œsophagus had occurred, such results were usually only temporary. It was impossible by passing a bougie to stretch the orifice, because one could not get in a large enough bougie to produce actual stretching of the muscular fibre. In many cases, if there was inflammation of the sac, when the bougie was passed it irritated the œsophageal wall, and spasm was increased by passing the bougie. This was true in the case spoken of by Dr. Graham. In this case any attempt made to pass the bougie was followed by greater spasm.

Other means had been devised to stretch the cardia. Rosenheim and others resorted to the use of rubber bags that were introduced to the seat of stricture, and filled with air or water. When the rubber bag was distended with air or water, expansion of the rubber took place at the point of least resistance, which was downward into the stomach, and upward into the dilated œsophagus, so that insufficient pressure was exerted at the point where the greatest stretching was required. This, however, did more good than the passage of bougies. Rosenheim resorted to this method successfully in one or two cases. Mikulicz did a gastrostomy in a case which was approaching inanition, hoping that by putting the œsophagus absolutely at rest the spasm would be relieved. After a period of two or three years, no influence having been exerted upon the spasm, he cut into the stomach and forcibly dilated the cardia with an instrument on the order of a uterine dilator. The symptoms were relieved. He operated subsequently on three other cases, and, according to the last reports, the results were good. Since then other surgeons had adopted the same means.

Dr. Sippy mentioned the manner in which he treated the case referred to by Dr. Graham, and two other cases.

He had constructed a dilator which consisted of a rubber bag, about three and a-half inches long, encased in a silk bag, which limited accurately the distention produced. When inflated with air the circumference of the silk bag was 15 cm. The dilating force was accurately controlled by the silk bag, and the maximum pressure exerted at the point desired. The bag was introduced and held in position by a bougie. When collapsed and surrounded by a condom to prevent friction, the greatest diameter of the instrument was about half that of an ordinary stomach-tube. By altering the size of the silk bag any degree of dilatation desired could be readily accomplished. No anæsthetic was required, and the serious operation of Mikulicz was obviated. In the case referred to by Dr. Graham the œsophagus held 500 c.c. For three months previous to using the instrument the patient had been unable to take nourishment except through a stomach-tube, by means of which she was fed four times daily. The bag was used twice, and the obstruction was at once relieved. Since then he has dilated two other cases. One was a student of the University of Illinois, whose œsophagus held 400 c.c. His trouble had lasted for three years, during which time he had lost a great deal in weight. In another case one dilatation was sufficient to relieve the symptoms for a period of six months. After a drinking bout there was a slight return of the spasm, and dilatation was again performed, with complete relief. One could readily see how the œsophagus might vary in size, and that a greater degree of dilatation might be required in one case than in another. It was possible to dilate the cardia efficiently and accurately without resorting to gastrostomy.

PANCREATIC CYST.

Dr. Edward H. Ochsner exhibited some concretions removed from a pancreatic cyst. The patient presented a tumor in the left hypochondrium, which caused no special discomfort, except that it was slightly tender on pressure and alarmed the patient because of its presence. The patient had very thick abdominal walls, and although the diagnosis could not be made positively a probable diagnosis of pancreatic cyst was made. At the operation a cyst was found containing 700 c.c. of straw-colored fluid and three softish, irregular, yellow concretions, pea-sized and slightly larger concretions.

In conjunction with this case he presented a trocar which he had used in withdrawing this fluid without spilling a drop. He said there were many similar trocars on the market, the only difference between this and the others being that this always worked, while the others rarely ever worked after they had been boiled three or four times. The reason why this trocar always works is because both the tube and the stilet are made of gun-metal and are made with the same care and in the same manner as an ordinary all-metal syringe, while the ordinary trocars on the market depend for their vacuum-producing power upon packing, which is ruined by a few boilings. The instrument exhibited had been used for four years, boiled with all the other surgical instruments probably a thousand times, and is working just as well to-day as it did when perfectly new. The instrument was originally described in the May, 1903, number of the Annals of Surgery.

DIAGNOSIS AND TREATMENT OF COXA VARA.

DR. JOHN L. PORTER read a paper entitled as above.

DR. WALLACE BLANCHARD had come to the conclusion that much confusion could be avoided by classifying these cases as false and true coxa vara. One class of cases that would come under the head of false coxa vara Dr. Porter had not mentioned, and that was the coxa vara of infantile rickets, and these cases would be frequently seen. In the last five years they had had twelve cases of coxa vara from infantile rickets at the Home for Crippled Children. These cases were pronounced in every instance. The patients stood with a marked tilting of the body, but walked without limping. Skiagrams in several of these cases showed deflection downward of the neck and depression head of the femur. Adult cases of coxa vara, with a history of the condition having existed from childhood, should be classed under the head of the false coxa vara of infantile rickets. Again, under the head of false coxa vara he would place all cases of sudden onset—those cases that came on with sudden pain. He believed they were all cases due to traumatism. They were either cases of epiphyseal separation or of fracture, more or less impacted.

A case of Dr. Greensfelder's was presented to the Society a month ago, which in the speaker's opinion was a clear case of impacted fracture of the neck. The head and neck were deflected downward, but there was a distinct fracture line. He would put all cases of impacted fracture in which a skiagram showed fracture, all cases of epiphysealysis, and all cases with sudden onset of pain, and any history of traumatism in which deformity came on suddenly, along with cases of infantile rickets, under the head of false coxa vara.

Then it was essential to give the conditions under which true adolescent coxa vara existed. The process was one of years. At first it was imperceptible. The patient or his friends would notice a slight limp. A year later they were sure that the patient limped in walking, and two years later there would be a distinct shortening of half an inch or more, and in the succeeding five or six years there would be a gradual increase. This was the case with the patient who had bilateral coxa vara, and whom he had exhibited at a previous meeting. Commencing at seventeen, the patient now being twenty-one, the condition had gradually increased. Abduction deformity in one year had increased about ten degrees in one hip. In the other hip the neck was about horizontal. True adolescent coxa vara was a gradual, almost imperceptible, remoulding of the neck and a gradual depression of the head. In Dr. Blanchard's case the diphtheria, which the patient had at the age of seventeen, probably had the effect of weakening bone structure, so that it failed to carry the weight of the body and gradually there was a remoulding under pressure. A weak epiphysis occasionally happened. He had a case of epiphysealysis about two years ago in a Grattan osteoclast, and the patient was still under treatment. He expected at the time to do a supracondyloid osteoclasis. He had made something like two hundred supracondyloid osteoclases, in which the epiphysis had an opportunity to separate, but this was the only case he had had in which it had occurred. He felt that weak epiphyses would occasionally occur, and he supposed those separations occurred in the hip the same as they did in the knee. Dr. Porter had shown one such case. Cases of separation of the epiphysis of the head of the femur should be classed under the head of false coxa vara.

Dr. Porter had said truly that cuneiform osteotomy relieved the adduction deformity and was an ideal operation; but the same question came up here that arose at the last meeting, and Dr. Porter had not answered it. Dr. Blanchard had recently presented a patient to the Society whose case had been progressing for five years, and in whom adduction deformity had increased about ten degrees, and shortening had increased in both legs, undoubtedly because of more depression of the head than obtained years ago. At what stage in the disease in such a case were we justified in doing cuneiform osteotomy? Dr. Blanchard said that his patient was ready for an operation at any time. If he did a cuneiform osteotomy and the disease was progressing as it had progressed for five years, while he thought he might get a good result from the osteotomy, he would lose that result completely in two years. The question arose, and was yet unanswered, When could we perform osteotomy on a progressive case with a result that would remain permanently good? This question he had not settled in his own mind, and said it was an open one, and when the various forms of false coxa vara were excluded and the cases were simmered down to the one class of true adolescent coxa vara, which were slowly progressive, the question of operative procedure was of vital importance to the patient and of great concern to the surgeon.

Dr. Louis Greensfelder remarked in regard to a case of coxa vara which was presented to the Society for him by an interne two months ago, that it presented the aspects clinically of the cases shown by Drs. Blanchard and Porter. The patient sustained a slight traumatism; but was able to be up and around, with slight limp. Nothing further was noticed for six months, when deformity was observed. This deformity was progressive for one year after it was first noticed. When the patient was exhibited to the Society it was two and a-half years after the injury, one year after the deformity was noticed.

Dr. Porter referred to rachitic coxa vara in infancy. Whitman had called attention to the fact that a slight bending downward of the neck due to a rachitic affection of the joint in infancy passed unnoticed, because of the relatively shorter and thicker head and thick tissues about the hip. In fact, it was hard to distinguish a slight affection of the hip-joint in a child, and they oftentimes walk without a limp. When a patient reached the age of thirteen to fifteen, the slight bend in infancy resulted in an increasing strain upon the joint, and the rachitic distortion of the neck in infancy might be the determining cause of greater depression of the neck in adolescence. Up to the time Dr. Blanchard began his investigation of rachitic joints with the X-ray, recognition of these rachitic bends at the hip in children was not made. We were very much at sea as to when the disease starts. In Dr. Blanchard's case the disease seeemed to be progressing. Dr. Senn had reported one case which began at the age of thirty-nine, and was forty-two when distortion was recognized.

As regards osteotomy, he did not see why a patient would not be just as well off with the leg abducted in a splint or plaster-of-Paris cast after osteotomy of the femur, because the femur in healing would be in better relation to the axis of the neck, and when the operation was completed, when union took place, the normal angle of the neck to the shaft would be practically restored, which, in a measure, precluded further development of the deformity. He was rather inclined to think that it was not poor surgery to operate upon these cases when the neck of the femur was bent in a boy, 18 years of age, on the supposition that as he grew older his tissues were going to get older, and he had a better chance of restoration of the normal axis than in trying to get well with the weight still borne at an acuter angle than normal, with greater strain on the neck.

Dr. Blanchard's case was the first one in which diphtheria was mentioned as being the possible determining cause. He did not see why any of the infectious diseases occurring at that time of life might not be a determining cause.

Referring to Dr. Greensfelder's case, in which he (Greensfelder) said the patient sustained a slight traumatism, which was followed later by deformity, he would say the epiphysis separated, but that it did not separate completely; it simply allowed the neck to slide down on the inner side, and there was constant inflammation and an attempt at restoration of function was kept up, and Whitman had pointed out that the neck was very apt to bend beyond the epiphysis where the softest part of the neck is. In Dr. Greensfelder's case he did not see why a slight traumatism should not be the true determining cause of coxa vara, a true bending of the neck, and why should we try to differentiate these cases from other cases so far as the diagnosis and ultimate function of the member were concerned? Any kind of traumatism in a boy might develop separation of the epiphysis, because of the tremendous strain that came from the bending of the neck downward, and finally there was a pushing off, with the same condition developing as in the case of Dr. Greensfelder and his own at the start.

SINGLE KIDNEY IN MEDIAN LINE WITH TWO URETERS.

Dr. D. A. K. Steele reported the case of a man, 32 years of age, who presented himself with a history of stomach trouble, nausea, vomiting, and some distress for a period of three years. About three months before he came under Dr. Steele's observation he developed a direct inguinal hernia. In two or three weeks a similar hernia appeared on the opposite side. Patient came for the purpose of an operation to be cured of his acquired direct double inguinal hernia. He was sent to the West Side Hospital and prepared for operation. When the patient was under the anæsthetic and Dr. Steele was ready to begin the operation for hernia, in running his hands over the abdomen just below the umbilicus, he discovered a somewhat kidney-shaped tumor. This tumor was freely movable from side to side, and painless. He examined the patient before he was anæsthetized, and there was no pain on pressure. The tumor was located below the umbilicus a little more to the right than to the left. Before doing the hernia operation he made a slit over the tumor and opened the abdominal wall and found that the tumor was retroperitoneal. It was kidney-shaped and apparently was a kidney. He slipped his hand up under the right kidney region and found no kidney there. There was nothing below the liver on the right side, only an empty space. There was a central tumor slightly movable, but it had no very great amount of excursion. The thought then occurred to him that as this was a kidney in the median line perhaps it had always been there; it might have found a new dwelling-place. He examined the left side for the left kidney, and found no kidney there. The man had this single, rather large kidney, which apparently had always occupied the position in the median line. The question arose whether the man had two ureters or one ureter. He thought for scientific purposes he had carried the examination far enough. He closed the wound in the abdominal wall without deciding that point definitely, thinking it could be decided later on by the introduction of catheters and by taking a skiagraph. He did a herniotomy, and a couple of weeks afterwards, when the man was convalescent and about ready to leave the hospital, he invited Dr. Kreissl to use his illuminating apparatus, cystoscope and ureteral catheters, and to examine the bladder to see if there were two ureteral openings leading into the bladder, and to introduce, if possible, metallic ureteral catheters, so that a skiagraph could be taken and determine whether there was one or two ureters. Dr. Kreissl did so. Some difficulty was encountered in introducing the cystoscope, on account of a small meatus and moderately tight urethral stricture. Under cocainization, without a general anæsthetic, the bladder was explored and two ureteral openings were found. The cathether was introduced on one side with some difficulty, and then an attempt was made to introduce a second catheter, which would only enter the ureteral opening, but would not go in more than three-quarters of an inch. The man complained of considerable pain, from the stretching of his urethra, and they desisted without taking a skiagraph at this time. Dr. Steele arranged for a subsequent examination three days later, and was ready to make it, but the man objected, and said that he would leave the hospital if he were subjected to another such examination. Dr. Steele declined to see him for two or three days, but before he left the hospital the patient sent word that he was anxious to have another examination. He made another appointment with Dr. Kreissl, who, he said, would give the result of the second examination to the Society.

Dr. Steele exhibited the skiagraphs that were taken following the second examination by Dr. Kreissl.

DR. F. KREISSL said the case reported by Dr. Steele illustrated the great value of the combination of sounding the ureters and of photographing the metallic sounds in position, or the combination of catheterization and radiography, as originally devised by A. B. Johnson, New York, in 1899, and almost simultaneously by Loewenhardt, in Berlin. It also demonstrated the weak points of intravesical segregation of the urine.

He was called to see a case by Dr. Cuthbertson to catheterize the ureters for a functional test of the right kidney, because he (Cuthbertson) had found a very large tumor of the left kidney, and wanted to remove this kidney. He passed the cystoscope and found only one ureteral opening on the right side. He passed the catheter in the ureter and took sectional samples of the urine. At about two inches above the ureteral orifice, he got a slightly cloudy urine, which contained pus. After passing it four inches up the ureter he got clear urine. He could not see another ureteral opening. In this case there was no ligamentum interuretericum. He left an ordinary catheter in the bladder and the ureteral catheter in the pelvis of the kidney for three hours, collecting six ounces of urine from the ureteral catheter and none from the bladder. It seemed then that there was only one kidney, and that an operation could not be done. Dr. Kreissl then suggested leaving the catheter *in situ* and, after injecting bismuth emulsion through the catheter, having an X-ray picture taken. If then a shadowgraph showed a shadow to the left side, one would be almost sure there was only one kidney and one ureter. The shadowgraph showed the ureteral catheter in position on the right side up to the right kidney, which permitted the conclusion that the patient had two kidneys. This taken together with the findings of the urine indicated there was trouble on the left side and apparently a fork-shape insertion of the left ureter into the right one by crossing the spine. The patient was a woman, 68 years of age, who had an enormous pyonephrosis, there being practically no kidney tissue left. Considerable pus was encountered in opening the kidney, and a stone was found lodged in the upper end of the ureter.

In the case reported by Dr. Steele there were two ureteral orifices in the bladder in the normal position where they are usually found. There was urine coming from both ureters, yet there was only one kidney. It remained to be proven whether these two ureteral openings led to one or two kidneys. The only possibility of establishing this fact was to take an X-ray picture. On a glass plate these shadows showed much more distinctly than they do in the print. In measuring the distance from the ureteral opening to the renal pelvis, he found twenty centimetres on the left side, and about eighteen centimetres on the right side, and in the picture on the glass plate the ureters are seen converging toward the median line.

Dr. Kreissl considered the possibility of making a mistake in judgment when using intravesical segregation in these cases, and spoke of the superiority of catheterization in combination with the X-ray. In a case like that of Dr. Cuthbertson's, where there was only one ureter, if one obtained a specimen of the urine by intravesical segregation, even preceded by a cystoscope survey of the bladder, one was unable to say whether there were one or two kidneys. In the other case there would be two working ureteral openings suggesting the presence of two kidneys, eventually leading into a disastrous nephrectomy. He said that Johnson, of New York, and Loewenhardt, who had devised this combined method, employed a lead stylet enclosed in an ordinary ureter-catheter. The bougie which he had seen used for this purpose quite frequently led to false diagnosis. At the narrowings of the ureter it was liable to be caught. When one introduced such a catheter into the ureter, and it was caught some-where in a fold or at any of the anatomical narrowings, it would kink, and one would not be able to pass it farther; then if an X-ray picture were taken, one would see that the sound was coiled up, and this would lead one to make a diagnosis of stricture or even of a stone when there was none. The value of this method to determine enlargement of the pelvis of the kidney was problematical. If one should happen to enter the renal pelvis with a lead bougie, such as he had mentioned, it would likely coil up in such a manner that it would indicate a much distended renal pelvis. But it was not necessary to use it, because if there was a distended renal pelvis and the ureteral catheter entered the renal pelvis, urine would first escape as if it came through the ordinary catheter from a full bladder, and from the quantity of this urine one could determine the size of the distended renal pelvis. For sounding both ureters simultaneously it was better to use a bougie flexible and the end sufficiently bevelled so as not to injure the ureter, which the lead bougie was likely to do. For simultaneous catheterization, which was necessary in Dr. Steele's case, he found this cystoscope insufficient.

To obtain urine from both kidneys separately, smaller-sized catheters would be sufficient; but when larger-sized bougies or catheters were used, which are armed with a lead stylet inside, great difficulty would be encountered in passing both and in obtaining a shadowgraph of both sounds in the ureters at the same time, because of too much friction between the two moist catheters.